

NOTES ON GEOGRAPHIC DISTRIBUTION

Reptilia, Squamata, Gymnophthalmidae, *Echinosaura horrida*: distribution extension and new geographic distribution map for Ecuador.

H. Mauricio Ortega-Andrade

División de Herpetología, Sección de Vertebrados,
Museo Ecuatoriano de Ciencias Naturales, calle
Rumipamba 341 y avenida de los Shyris, Quito,
Ecuador. E-mail: biomauro_rtg@yahoo.com

The terrestrial and semi-fossorial lizards of the genus *Echinosaura* inhabit the tropical and subtropical forests in the Pacific versant from western Panama across northwestern Colombia and west-central Ecuador (Torres-Carvajal 2001; Köhler et al. 2004). In Ecuador, this genus is currently represented by three species (*Echinosaura brachycephala*, *E. horrida* and *E. orcesi*) from the Bosque siempreverde de tierras bajas and Bosque siempreverde piemontano, near to the Cordillera de los Andes, between 200-1660 m above sea level (Köhler et al. 2004). According with Köhler et al. (2004), *Echinosaura horrida* can be readily distinguished from the other two congeneric species by the presence in the dorsum of continuous and longitudinal rows of tubercles juxtaposed (no continuous in *E. orcesi*; 2-6 scales between longitudinal rows of tubercles in *E. brachycephala*) and three ventral scales per caudal segment (five to six in *E. orcesi*; four in *E. brachycephala*). The taxonomy of the three species of the genus *Echinosaura* reported in Ecuador has been improved by several studies (Uzzell 1965; Fritts and Smith 1969; Fritts et al. 2002; Köhler et al. 2004), but only *E. horrida* is well-represented in collections (Fritts et al. 2002; Köhler et al. 2004), with 26 localities known from four provinces in the Pacific versant: Esmeraldas (8 localities), Imbabura (2), Manabí (2) and Pichincha (14). *Echinosaura horrida* occurs like an endemic species of the Choco Region, known from Isla Gorgona in the Pacific versant, adjacent mainland Colombia, and northwestern Ecuador, where it inhabits the tropical forests, between 200-860 m above sea level (Torres-Carvajal 2001; Fritts et al. 2002; Köhler et al. 2004; Torres-Carvajal 2005). Recent field work at Punta Galeras, northwestern Ecuador, and after a revision of specimens deposited at the Division of

Herpetology, Museo Ecuatoriano de Ciencias Naturales (DHMECN), reveals five new localities in the northwestern Ecuador and documents a range extension for *Echinosaura horrida*.

Abbreviations used in the text include: DHMECN = División de Herpetología, Museo Ecuatoriano de Ciencias Naturales collection; SVL = snout-vent length; and, TL = total length. Elevations and geographic coordinates were determined from the author's field notes and DHMECN database, according to the 1:250.000 physical map of the Republic of Ecuador, publishing by Instituto Geográfico Militar of Ecuador.

Herein, I report an extension of the range for *Echinosaura horrida* (Figure 1) from a single female specimen (DHMECN 2877), 43.58 mm SVL and 105.69 mm TL, and four additional localities from specimens collected in Esmeraldas and Imbabura provinces (Figure 2).



Figure 1. Lateral view of *Echinosaura horrida* (not collected), from estero Aguacate, near to cresta del San Francisco, Esmeraldas province.

The most notable specimen (DHMECN 2877) was collected on April 24, 2004 at cresta del río San Francisco, 117 m (00°41'52" N 80°01'03" W), Cantón Muisne, Esmeraldas province, Ecuador, by the author. It was observed at night (21:45 h) as it moved across a muddy patch near to a secondary forest. The other four specimens were captured moving across the rocks of small streams at night, in secondary forest. The record for *Echinosaura horrida* in cresta del río San Francisco is 145,41 km from its northern closest locality, near to San Javier (Fritts et al. 2002) in Esmeraldas province, and 96,43 km from the

NOTES ON GEOGRAPHIC DISTRIBUTION

closest southern locality, near to Pedernales-El Carmen road (Fritts et al. 2002), in Manabí province (Figure 2). The last map (Köhler et al. 2004) reported a distribution for *E. horrida* comprising an estimated area of occurrence in approximately 13,414 km² from localities near to

the western flanks of the Cordillera de los Andes. Based on the new record, *Echinosaura horrida* occurs also in a coastal forest from a locality in Esmeralda province, comprising an estimated area of occurrence in approximately 21,072 km² (Figure 2).

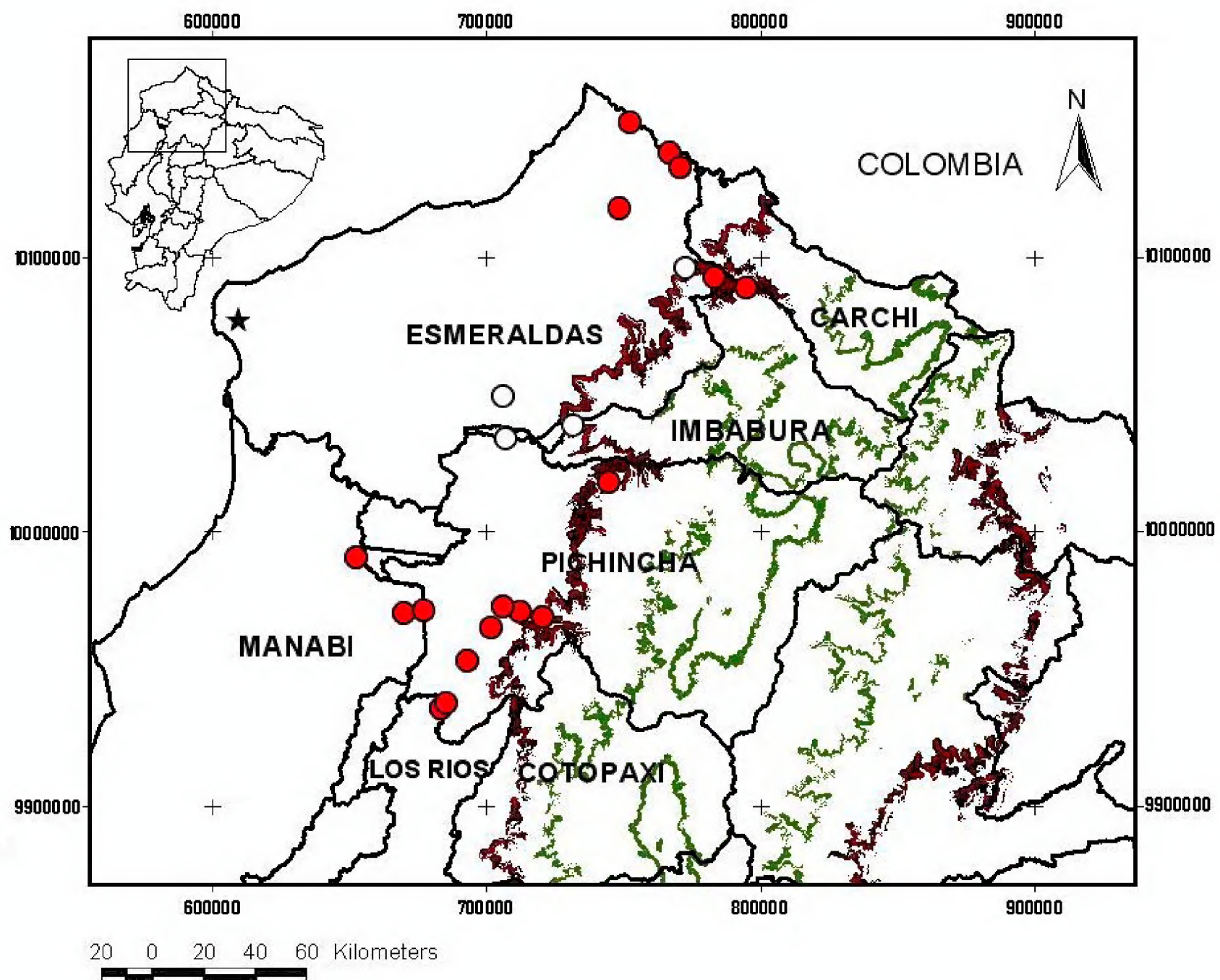


Figure 2. Distribution map of *Echinosaura horrida* for Ecuador. Star: new record from cresta del río San Francisco; open circles: collections of DHMECN; red circles: literature records. A brown line indicates elevations above 1000 m; a green line indicates elevations above 3000 m.

Three specimens (DHMECN 319, DHMECN 2929, and DHMECN 3397) were collected in localities from Bosque siempreverde piemontano, and two specimens (DHMECN 2877, DHMECN 3318) from localities in Bosque siempreverde de tierras bajas, according with Cerón et al. (1999). The population density and primary natural history of *Echinosaura horrida* are unknown. Based on the present report and other scientific collections, I consider this species to be widely distributed in northwestern Ecuador.

Acknowledgements

I thank to Mario Larrea, Administrator of the Reserva Monte Saino, for providing access to facilities for the field work, and all the persons involved directly with this effort: Antonio Ortiz, Cecilia Tobar, Mónica Arellano, Fernanda Armas, Raúl Cabrera, Fabricio Narváez. I thank especially to Mario Yáñez-Muñoz, Paúl Meza-Ramos, Carlos Carrera, Marco Altamirano and Ana Almendáriz for assistance with specimens, bibliography and their comments on the draft

NOTES ON GEOGRAPHIC DISTRIBUTION

manuscript. Paúl Tufiño and Paulina Moreno providing facilities and volunteer support on the field work at Río Naranjal. Finally, Thomas Fritts, Diego F. Cisneros-Heredia and Ricardo J. Sawaya made valuable comments and contributed with important suggestions on the final manuscript - thank you very much. The field work was financed by a scholarship granted by the Program of Threatened Species, supported by EcoCiencia, Conservation International and the Netherlands Royal Embassy.

Literature cited

- Cerón, C., P. W., R. Valencia, and R. Sierra. 1999. Las Formaciones Naturales de la costa del Ecuador. Pp. 55-73. In R. Sierra (ed.). Propuesta preliminar de un Sistema de Clasificación de Vegetación para el Ecuador Continental. Quito: Proyecto INEFAN/GEF-BIRF y EcoCiencia.
- Fritts, T. H., A. Almendáriz, and S. Samec. 2002. A new species of *Echinosaura* (Gymnophthalmidae) from Ecuador and Colombia with comments on other members of the genus and *Teuchocercus keyi*. Journal of Herpetology 36 (3): 349-355.
- Fritts, T. H. and H. M. Smith. 1969. A new teiid lizard genus from western Ecuador. Transactions of the Kansas Academy of Sciences 72: 54-59.
- Köhler, G., W. Böhme, and A. Schmitz. 2004. A new species of *Echinosaura* (Squamata: Gymnophthalmidae) from Ecuador. Journal of Herpetology 38 (1):52-60.
- Torres-Carvajal, O. 2001. Lizards of Ecuador: checklist, distribution and systematic references. Smithsonian Herpetological Information Service 131.
- Torres-Carvajal, O. 2005. Reptiles de Ecuador: lista de especies y distribución. Amphisbaenia y Sauria. Ver. 1. Version. Electronic database accessible at: <http://www.puce.edu.ec/zoologia/reptiliaweb/reptilesecuador/index.html>. Captured on 20 June 2006.
- Uzzell, T. M., Jr. 1965. Teiid lizards of the genus *Echinosaura*. Copeia 1965(1): 82-89.

Appendix

Specimens of *Echinosaura horrida* examined: Ecuador: Prov. Esmeraldas: DHMECN 319, El Placer, 00°52'N, 71°33'W, 770 m, collected by Juan José Espinoza; DHMECN 2877, cresta del San Francisco, 00°42'04"N 80°00'55" W, 117 m, collected by H. Mauricio Ortega-Andrade; DHMECN 2929, Reserva Biológica Canadé, 00°26'51.8" N, 79°08'53" W, 400 m, collected by Mario Yáñez-Muñoz; DHMECN 3318, Golondrinas, 00°18'22" N, 79°08'17"W, 200 m, collected by Mario Yáñez-Muñoz; Prov. Imbabura: DHMECN 3397, Río Naranjal, 00°21'05" N, 78°55'01" W, 725 m, collected by H. Mauricio Ortega-Andrade.

Received June 2006

Accepted October 2006

Published online October 2006